

SWBAT: define and calculate current

Jan 4-7:20 AM

# Welcome!!!

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SECA Physics  
Tuesday 17 February 2015

\* Pick up:

- slip of paper (for later)
- yellow sheet
- whiteboard, marker, eraser

Test Thursday!

Opening Question:

What do you think "electric current" means?

RIVER

FLOW  
ELECTRICITY

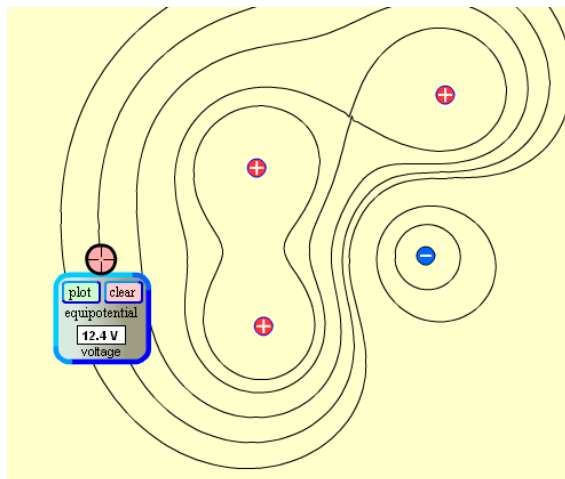
PHYSICS: FLOW OF ELECTRONS Centering

Sep 7-7:04 AM

Big Idea from last week:

### Voltage:

is the **potential** based on **position** in an electric field.



Feb 18-6:47 AM

What uses electric current?

In groups, think of as many things as you can that

- are in this room &
- use current (the flow of electrons)

SMART BOARD  
LAPTOPS  
OUTLETS  
FIRE ALARM  
HUMANS  
FUME HOOD, FAN  
SPEAKERS

CLOCK  
CHARGER  
PENCIL SHARPENER  
LIGHTS  
CELL PHONE  
PROJECTOR  
LIGHT SWITCH  
CART CHARGING  
BATTERIES

MOUSE  
HEADPHONES  
JACKS  
LAND LINE PHONE  
CALCULATOR  
"REMOTE ALARM LAMP"  
WATCH

Feb 18-6:50 AM

Concept sheet: 6 rows total

An electron is  $1.6 \times 10^{-19} \text{ C} = .00000000000000000016 \text{ C}$ 

Concept	Meaning	Symbol	Units	Analogy
CHARGE	PROPERTY OF PROTONS & ELECTRONS THAT CAUSES ATTRACTION & REPULSION	$q$	COULOMB $C$	
VOLTAGE = ELECTRIC POTENTIAL	POTENTIAL BASED ON POSITION IN AN ELECTRIC FIELD	$V$	VOLTS $V$	
CURRENT	THE FLOW OF ELECTRIC CHARGE = $\frac{\text{CHARGE}}{\text{TIME}}$	$I$ $I = \frac{q}{t}$	AMPERE $A$ $1A = 1 \frac{C}{s}$	

$$\frac{q}{I \cdot t}$$

Feb 23-7:34 AM

Practice!

$$\text{current} = \frac{\text{CHARGE}}{\text{TIME}}$$

$$I = \frac{q}{t} = \frac{6C}{2s} = 3A$$

If I have 6 C of charge going by in 2 seconds, how much current is that?

If we have 8 A of current for 4 sec how much charge is that?

$$q = I \cdot t = 8A \cdot 4s = 32C$$

How long did it take to have 5 C of charge flow if the current is 10 A?

$$t = \frac{q}{I} = \frac{5C}{10A} = 0.5s$$

Feb 18-6:54 AM

**Daily 3 Questions**

CP Hmwk: Create your own word problem using the  $I = q/t$  formula.

- \* Every day except test/project days
- \* 3 Questions on the topics of the day
- \* Main source of daily points
- \* I am happy to give credit when I have no concerns about someone giving or getting help with the answers.

You can't get your points if you don't have your **NAME!!!**

Name	Period
1.	
2.	
3.	

Sep 9-7:32 AM

1. What is the physics term for "flow of electrons"?

CURRENT

2. What are the **units** for current?

A, AMPS, AMPERE

3. What is one thing in the room that uses current?

HUMANS, LIGHTS, PHONE, OUTLET

Feb 18-6:59 AM